

*Claims:*

1. (Amended) A corrosion resistant brine fluid comprising:

water;

a source of water soluble cations where the cations are selected from the group consisting of lithium, sodium, potassium, calcium, zinc, ammonium, cesium, rare earths, and mixtures thereof to form a brine with the water; and

an additive selected from the group consisting of ammonia, an amine, a salt thereof, a compound capable of generating ammonia, an amine, and a salt thereof, and mixtures thereof where the ammonia, amine, or salt thereof is present in a concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic,

where the density of the brine is at least 1.1 pounds/gal (1.3 kg/l).

*Claim 2 is cancelled.*

5. (Amended) The corrosion resistant brine fluid of claim 4 where the source of water soluble zinc cations is selected from the group consisting of zinc chloride and zinc bromide.

12. (Amended) A corrosion resistant brine fluid comprising:

water;

a source of water soluble cations where the cations are selected from the group consisting of lithium, sodium, potassium, calcium, zinc, ammonium, cesium, rare earths, and mixtures thereof to form a brine with the water; and

an additive selected from the group consisting of ammonia, alkyl or aryl amines of the formula  $R^1R^2R^3N$ , where  $R^1$ ,  $R^2$ , and  $R^3$  are independently selected from the group consisting of hydrogen, or hydrocarbon radical or substituted hydrocarbon radical, where the substituent is selected from the group consisting of oxygen, sulfur, nitrogen, halogen and mixtures thereof; where the sum of the number of carbon atoms in  $R^1$ ,  $R^2$ , and  $R^3$ , if

any, is 20 or less; ethylenediamine; aniline; and mixtures thereof, where the additive thereof is present in a concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic;

where the density of the brine is at least 11 pounds/gal (1.3 kg/l).

13. (Amended) A method for increasing the corrosion resistance of a brine fluid comprising:

providing a brine comprising:

water;

a source of water soluble cations where the cations are selected from the group consisting of lithium, sodium, potassium, calcium, zinc, ammonium, cesium, rare earths, and mixtures thereof to form a brine with the water; and

adding an additive selected from the group consisting of ammonia, an amine, a salt thereof, a compound capable of generating ammonia, an amine, and a salt thereof, and mixtures thereof, to provide an additive concentration ranging from about 0.05 to about 2.0 moles of additive per mole of cation, in the absence of added arsenic,

where the density of the brine is at least 11 pounds/gal (1.3 kg/l).

*Claim 14 is cancelled.*

17. (Amended) The method of claim 16 where in providing the brine the source of water soluble zinc cations is selected from the group consisting of zinc chloride and zinc bromide.